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IN THE DRAWINGS:

Applicant submits herewith for the Examiner's approval a proposed amended Figure 4, with the proposed changes indicated in red. It is respectfully submitted that no new matter has been added.

REMARKS

Claims 1-12 are pending.

Applicant notes with appreciation the indicated allowability of claims 2-7.

Figure 4, as well as the corresponding portion of the specification that refers to Figure 4, is objected to because of the placement of resistor R4. Accordingly, applicant has amended Figure 4 and the specification to indicate that the equivalent operational amplifier subcircuit is not ideal but rather includes the components that are illustrated in Figure 3 but are not shown in Figure 4. Thus, it is clear that the "ideal" operational amplifier subcircuit is actually a preferred equivalent operational amplifier subcircuit that includes negative feedback. This will prevent the problem of positive feedback causing the output of the operational amplifier to either increase constantly or decrease constantly. It is respectfully submitted that this is fully supported by the original specification since page 4, lines 22-25 indicate that the components resistor R1, resistor R2, resistor R3, capacitor C1, capacitor C2, capacitor C3, and transistor M1 can be included into in "idealized" operational amplifier OA as shown in Figure 4. However, to make it clear that these components are merely being schematically represented by the operational amplifier OA subcircuit, and further to avoid confusion with the term "ideal," applicants are making it clear that the above components are included into a preferred equivalent operational amplifier OA subcircuit that includes negative feedback. Accordingly, it is respectfully submitted that the amendments to the figure and the specification do not include new matter. Furthermore, it is respectfully submitted that these amendments obviate the Examiner's objection to the drawings and the specification and therefore, it is respectfully requested that the objection be withdrawn.

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Claims 1-12 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. The Examiner once again indicates that claims 1 and 12 are misdescriptive because they recite "negative terminal of the shunt capacitor coupled to the second terminal of the feedback resistor and to the positive terminal of the operational amplifier equivalent subcircuit." The Examiner refers to the drawing objection. Accordingly, applicant has amended claims 1 and 12 to make it clear that the operational amplifier equivalent subcircuit includes negative feedback. It is respectfully submitted that this obviates the rejection of the claims under 35 USC §112 and therefore, it is respectfully requested that the rejection be withdrawn. Furthermore, it is respectfully submitted that the amendment to claims 1 and 12 is fully supported as discussed above with regard to the amendment to figure 4 and the specification.

Claims 1, 11 and 12 stand rejected under 35 USC §102(b) as being anticipated by Wouters et al. (U.S. Patent No. 4,158,824).

It is respectfully submitted that Wouters et al. does not disclose a feedback resistor having first and second terminals wherein a first terminal of the feedback resistor is coupled to the negative terminal of the noisy load device and to the output terminal of the operational amplifier equivalent subcircuit, while a second terminal of the feedback resistor is coupled to the negative terminal of the shunt capacitor and to the positive input terminal of the operational amplifier equivalent subcircuit. Accordingly, it is respectfully submitted that for at least this reason, Wouters et al. does not anticipate claims 1 and 12. Accordingly, it is respectfully submitted that claims 1 and 12 are allowable.

Claims 8-11 depend on claim 1 and therefore, they are allowable for at least the reasons claim 1 is allowable.

These rejections are respectfully traversed and reconsideration is respectfully requested.

Claims 8-10 stand rejected under 35 USC §103(a) as being unpatentable over Wouters et al.

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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE SPECIFICATION**

[01] [0028] Figure 4 illustrates a simplified circuit according to the present invention of the active power filter for isolating an electrically noisy load. To understand the functioning of the present invention, the components resistor R1, resistor R2, resistor R3, capacitor C1, capacitor C2, capacitor C3, and transistor M1 can be included into a preferred equivalent [an idealized] operational amplifier OA subcircuit that includes negative feedback as shown in Figure 4, with only shunt capacitor C4 and feedback resistor R4 remaining along with voltage source V_{DROP} , and low noise power supply V_{IN} , from among the circuit elements shown in Figure 3. From Figure 4, a frequency, $f_{VOUT}(-3db)$ is defined, in which the impedance of shunt capacitor C4 is equal in magnitude to the impedance of feedback resistor R4. At $f_{VOUT}(-3db)$, $\frac{1}{2} \Delta V_{OUT}$ is dropped across feedback resistor R4 and the other $\frac{1}{2} \Delta V_{OUT}$ across shunt capacitor C4. In other words, at the frequency $f_{VOUT}(-3db)$, the circuit impedance of the Figure 4 combination of elements seen by the noisy load 401 is equal to the dynamic load impedance of the noisy load 401 itself.

IN THE CLAIMS:

- 1 1. (Amended) An active power filter, comprising:.
- 2 a feedback resistor having first and second terminals;
- 3 a shunt capacitor having positive and negative terminals;
- 4 an operational amplifier equivalent subcircuit that includes negative
- 5 feedback and having positive and negative input terminals and having an output terminal;
- 6 and
- 7 a voltage drop source having positive and negative terminals;
- 8 wherein the positive terminal of the shunt capacitor is coupled to a
- 9 positive terminal of a noisy load device and to a positive terminal of a low noise direct
- 10 current power supply;

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11 wherein the negative terminal of the shunt capacitor is coupled to the
12 second terminal of the feedback resistor and to the positive input terminal of the
13 operational amplifier equivalent subcircuit;

14 wherein the first terminal of the feedback resistor is coupled to the
15 negative terminal of the noisy load device and to the output terminal of the operational
16 amplifier equivalent subcircuit;

17 wherein the positive terminal of the voltage drop source is coupled to the
18 negative terminal of the operational amplifier equivalent subcircuit;

19 wherein the negative terminal of the voltage drop source is coupled to a
20 negative terminal of the low noise direct current power supply.

1 12. (Amended) An active power filter, comprising:
2 a feedback resistor having first and second terminals;
3 a shunt capacitor having positive and negative terminals;
4 an operational amplifier equivalent subcircuit that includes negative
5 feedback and having positive and negative input terminals and having an output terminal;
6 and

7 a voltage drop source having positive and negative terminals;
8 wherein the positive terminal of the shunt capacitor is coupled to a
9 positive terminal of a low noise load device and to a positive terminal of a noisy direct
10 current power supply;

11 wherein the negative terminal of the shunt capacitor is coupled to the
12 second terminal of the feedback resistor and to the positive input terminal of the
13 operational amplifier equivalent subcircuit;

14 wherein the first terminal of the feedback resistor is coupled to the
15 negative terminal of the low noise load device and to the output terminal of the
16 operational amplifier equivalent subcircuit;

17 wherein the positive terminal of the voltage drop source is coupled to the
18 negative terminal of the operational amplifier equivalent subcircuit;

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- 19 wherein the negative terminal of the voltage drop source is coupled to a
20 negative terminal of the noisy direct current power supply.

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